Amendments to the Claims:

This listing of claims will replace all prior version, and listings, of claims in the application.

Listing of Claims:

1. (Canceled)

2. (Previously Amended) A method as in claim 28 further comprising a step prior to step (a) consisting of determining by analysis of ambient light or user election whether a flash is needed.

3. (Previously Amended) A method as recited in claim 28 wherein said calculating includes multiplying the energy level of said flash by a pre-set constant factor if said flash degree of exposure is severely under exposed or severely over exposed.

4. (Previously Amended) A method as recited in claim 28 wherein said calculating further includes

a) setting said subsequent flash energy level at the maximum flash energy level for a final flash energy level if two or more consecutive flash degrees of exposure are severely under exposed; and

b) setting said subsequent flash energy level at a minimum flash energy level for a final flash energy level if two or more consecutive flash degrees of exposure are severely over exposed.

5. (Previously Amended) A method as recited in claim 28 wherein said activating a

flash with a flash energy includes

a) detecting an initial voltage of a flash capacitor;

b) calculating a cutoff voltage of said flash capacitor at which voltage a quantity of energy equal to said flash energy is transferred to power said flash; and

c) transferring a quantity of energy equal to send flash energy to said flash.

6. (Currently Amended) A method as recited in claim ~~1~~ 28 wherein said analyzing includes

a) sampling a first quantity of data from a first area of said image; and

b) sampling a second quantity of data from a second area of said image.

7. (Previously Amended) A method as recited in claim 28 wherein said analyzing further includes

a) creating a histogram of quantity of said image intensity data versus intensity;

b) preparing a bar graph with a multiplicity of regions from said histogram; and

c) evaluating the quantity of data in each said region of said bar graph.

8. (Original) A method as recited in claim 7 wherein said calculating includes scaling said image intensity data to determine a scaling factor to multiply times said flash energy to calculate

a final acceptable flash energy if said degree of exposure is under exposed or over exposed.

9. (Canceled)

10. (Canceled).

11. (Original) A method as recited in claim 2, wherein said determining by analysis includes

a) sampling a quantity of ambient light with said camera having a first set of camera parameters;

b) grabbing an image to create image intensity data;

c) analyzing corresponding image intensity data of an image derived from said ambient light to determine an ambient degree of exposure;

d) calculating subsequent camera parameters to sample a quantity of ambient light to achieve a corrected degree of exposure; and

e) repeating steps (a) through (d) until a said set of camera parameters are determined resulting in an acceptable quantity of ambient light for achieving a correct exposure, or until it is determined that a flash is needed.

12. (Original) A method as recited in claim 11 further comprising:

sampling a quantity of ambient light equal to said acceptable quantity of ambient light.

13. (Original) A method as recited in claim 3 wherein said calculating further includes

a) setting said subsequent flash energy level at the maximum flash energy level for a final flash energy level if two or more consecutive flash degrees of exposure are severely under exposed; and

b) setting said subsequent flash energy level at a minimum flash energy level for a final flash energy level if two or more consecutive flash degrees of exposure are severely over

exposed.

14. (Canceled).

15. (Currently Amended) A flash method as recited in claim 29 further comprising:

a) multiplying said first energy level by a pre-determined factor if said first degree of exposure is severely under exposed or severely over exposed to determine a second flash energy level;

b) activating said flash with said second flash energy level;

c) grabbing a second image to create second image intensity data;

d) analyzing corresponding second image intensity data of said second image derived from said second flash to determine a second degree of exposure;

e) scaling said second flash energy level if said second degree of exposure is under exposed or over exposed to determine ~~a~~ said final flash energy; and

f) activating said flash with said final flash energy.

16. (Currently Amended) A flash method as recited in claim 29, further comprising:

a) setting ~~a~~ said final flash energy equal to a maximum flash energy if said second degree of exposure is severely under exposed;

b) setting ~~a~~ said final flash energy equal to a minimum flash energy if said second degree of exposure is severely over exposed; and

c) activating said flash with said final flash energy.

17. (Canceled)

18. (Previously Amended) An apparatus as in claim 30 further comprising means for determining by analysis of ambient light or user election whether a flash is needed.

19. (Previously Amended) An apparatus as recited in claim 30 wherein said means for calculating includes means for scaling said image intensity data to determine a scaling factor to multiply times said flash energy to calculate a final acceptable flash energy if said degree of exposure is under exposed or over exposed.

20. (Previously Amended) An apparatus as recited in claim 30 wherein said means for activating a flash with a flash energy includes

a) means for detecting an initial voltage of a flash capacitor;

b) means for calculating a cutoff voltage of said flash capacitor at which voltage a quantity of energy equal to said flash energy is transferred to power said flash; and

c) means for transferring a quantity of energy equal to send flash energy to said flash.

21. (Previously Amended) An apparatus as recited in claim 30 wherein said means for analyzing includes

a) means for sampling a first quantity of data from a first area of said image; and

b) means for sampling a second quantity of data from a second area of said image.

22. (Previously Amended) An apparatus as recited in claim 30 wherein said means for analyzing further includes

a) means for creating a histogram of quantity of said image intensity data versus intensity;

b) means for preparing a bar graph with a multiplicity of regions from said histogram; and

c) means for evaluating the quantity of data in each said region of said bar graph.

23. (Canceled).

24. (Canceled).

25. (Canceled).

26. (Previously Amended) A flash apparatus as recited in claim 31 further comprising:

a) means for multiplying said firs-t energy level by a pre-determined factor if said first degree of exposure is severely under exposed or severely over exposed to determine a second flash energy level;

b) means for activating said flash with said second flash energy level;

c) means for grabbing a second image to create second image intensity data;

d) means for analyzing corresponding second image intensity data of said second image derived from said second flash to determine a second degree of exposure;

e) means for scaling said second flash energy level if said second degree of exposure is under exposed or over exposed to determine a final flash energy; and

f) means for activating said flash with said final flash energy.

27. (Original) A flash apparatus as recited in claim 26, further comprising:

a) means for setting a final flash energy equal to a maximum flash energy if said second degree of exposure is severely under exposed;

b) means for setting a final flash energy equal to a minimum flash energy if said second degree of exposure is severely over exposed; and

c) means for activating said flash with said final flash energy.

28. (Original) A flash method operable each time a flash picture is taken with a digital camera, said method comprising performing the following steps with the camera each time the camera takes a flash picture:

a) activating a flash with a flash energy lower than the energy normally required for an acceptable final flash energy level for achieving a correct exposure;

b) grabbing an image of a subject located a distance from said camera to create image intensity data;

c) analyzing said image intensity data to determine a flash degree of exposure, wherein the analyzing does not require knowledge of said distance;

d) calculating a subsequent flash energy level to achieve a corrected degree of exposure;

e) repeating steps (a) through (d) until the acceptable final flash energy level for achieving a correct exposure is determined; and

f) activating a flash at the determined acceptable final flash energy; wherein each of steps (a) through (f) is performed automatically each time the camera takes a flash picture.

29. (Original) A flash method operable each time a flash picture is taken with a digital camera, said method comprising performing the following steps with the camera each time the camera takes a flash picture:

a) activating a flash with a first flash energy lower than the energy normally required for an acceptable final flash energy level;

b) grabbing a first image of a subject located a distance from said camera to create first image intensity data;

c) analyzing said first image intensity data to determine a first degree of exposure, wherein the analyzing does not require knowledge of said distance;

d) scaling said first flash energy to determine a final flash energy level; and

e) activating said flash at said final flash energy level for taking a picture; wherein each of steps (a) through (e) is performed automatically each time the camera takes a flash picture.

30. (Original) A flash apparatus operable each time a flash picture is taken with a digital camera, said apparatus comprising:

a) means for activating a flash with a flash energy lower than the energy normally required for an acceptable final flash energy level for achieving a correct exposure;

b) means for grabbing an image of a subject located a distance from said camera to create image intensity data;

c) means for analyzing said image intensity data to determine a flash degree of exposure, wherein the analyzing does not require knowledge of said distance;

d) means for calculating a subsequent flash energy level to achieve a corrected degree of exposure;

e) means for repeating steps (a) through (d) until an acceptable final flash energy level for achieving a correct exposure is determined; and

f) means for activating a flash at the determined acceptable final flash energy; wherein the apparatus is integrated with the camera and operates automatically each time the camera takes a flash picture

31. (Original) A flash apparatus operable each time a flash picture is taken with a digital

camera, said apparatus comprising:

a) means for activating a flash with a first flash energy lower than the energy normally required for an acceptable final flash energy level;

b) means for grabbing a first image of a subject located a distance from said camera to create first image intensity data;

c) means for analyzing said first image intensity data to determine a first degree of exposure, wherein the analyzing does not require knowledge of said distance;

d) means for scaling said first flash energy to determine a final flash energy; and

e) means for activating said flash at said final flash energy level for taking a picture; wherein the apparatus is integrated with the camera and operates automatically each time the camera takes a flash picture.